PCT/EP98/05360

ABSTRACT

The present invention relates to a method for the characterization of disseminated and micrometastasized cancer cells on the basis of DNA and/or RNA, wherein cells obtained from body fluid from an individual are investigated on the basis of mRNA for at least one cancer-specific gene; and/or cancer cells removed from the body fluid of an individual are investigated on the basis of DNA and/or mRNA for at least one cancer-specific gene, and the same investigation is carried out with non-cancer cells from the same individual for comparison. In particular, the cells and the cancer cells are additionally investigated for at least one cancer-associated gene, and the same investigation is carried out on non-cancer cells from the same individual for comparison. The cancer-specific genes include oncogenes, mutated tumour suppressor genes and genes which are essentially not expressed in non-cancer cells in the body fluid investigated. The cancer-associated genes are, for example, tissue-specific, correlate with the ability of circulating cancer cells to metastasize, code for steroid hormone receptors, comprise drug resistance genes and/or correlate with immunomodulation, cell proliferation or apoptosis. The present invention in particular relates to the use of the method for the in vitro diagnosis of cancer. It also relates to the use of disseminated and micrometastasized cancer cells characterized according to the invention for testing active substances for an antineoplastic effect and to means for carrying out the method.

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